



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/780,845

02/18/2004

Jan K. Schiffmann

DP-309762

2509

7590 02/05/2007  
STEFAN V. CHMIELEWSKI\*  
DELPHI TECHNOLOGIES, INC.  
Legal Staff MC CT10C  
P.O. Box 9005  
Kokomo, IN 46904-9005

EXAMINER

MANCHO, RONNIE M

ART UNIT

PAPER NUMBER

3663

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

02/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/780,845	<b>Applicant(s)</b> SCHIFFMANN ET AL.	
	<b>Examiner</b> Ronnie Mancho	<b>Art Unit</b> 3663	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the preamble recites “a collision detection system”. But the applicant does not disclose how the collision is detected. Applicant recites “estimating a crossing location”, but does not specify if “estimating a crossing location” sets forth collision detection. It appears that collision and crossing are the same.

The rest of the claims are rejected for depending on a rejected base claim.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Janky et al (6067031).

Regarding claim 1, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose a collision detection system comprising:

Art Unit: 3663

a first sensor 81 for sensing an object (V3, fig. 3) in a field of view and measuring a first range (col. 9, lines 26-67) defined as the distance between the object and the first sensor (see fig. 3);

a second sensor 83 for sensing the object in the field of view and measuring a second range defined by the distance between the object and the second sensor (col. 9, lines 26-67; and means (13, col. 3, lines 6-60) for estimating a crossing location (delta y13, fig. 3; col. 9, lines 52-64) of the object as a function of the first and second range measurements.

Regarding claim 2, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 1, wherein the estimated crossing location has a numerical value relative to a location midway between the first and second sensors.

Regarding claim 3, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 1, wherein the first sensor includes means for determining a first range rate and the second sensor includes means for determining a second range rate (fig. 5, steps 111 to 129), wherein the means for estimating further estimates the crossing location of the object further as a function of the first and second range rate measurements (see col. 9, lines 26-65).

Regarding claim 4, Janky et al (figs. 3-6, col. 9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 3, wherein the means for estimating further comprises:

means for computing a mathematical square of the range and computing a mathematical square of the product of range and range rate for each of the plurality of measurements for each of the first and second sensors (col. 9, lines 52 to col. 10, lines 10);

Art Unit: 3663

means (figs. 3-6, col. 9, lines 26-67; col. 10, lines 1-65) for generating a first curve based on the computations of the plurality of measurements sensed by the first sensor and a second curve based on the computations of the plurality of measurements sensed by the second sensor;

means (figs. 3-6, col. 9, lines 26-67; col. 10, lines 1-65) for estimating the crossing location of the object as a function of the first and second curves.

Regarding claim 5, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 4, wherein the estimated crossing location of the object is a function of the distance between the first and second curves.

Regarding claim 6, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 5, wherein the means for estimating the crossing location relative to a location midway between the first and second sensors further comprises means for dividing the distance between the first and second curves by twice the separation distance of the first and second sensors (fig. 3).

Regarding claim 7, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 1, wherein the means for estimating further comprises means for computing a mathematical square of range estimates for each of the first and second sensors, computing a difference of the squares, and estimating the crossing location as a function of the computed difference of the squares.

Regarding claim 8, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 1, wherein the means for estimating further comprises means for dividing the difference of the squares by twice the separation distance

Art Unit: 3663

between the first and second sensors to estimate the crossing location relative to a location midway between the first and second sensors.

Regarding claim 9, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 7, further comprising at least one tracking filter receiving outputs of the first and second sensors and providing the first and second range estimates to the means for computing a mathematical square of the range estimates for each of the first and second sensors.

Regarding claim 10, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 1, the collision detection system is mounted on a vehicle and is configured to estimated the crossing location of an object relative to the vehicle.

Regarding claim 11, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 1, wherein the means for estimating further comprises means for generating a collision output signal as a function of the estimated crossing location of the object (figs 4-6).

Regarding claim 12, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 1, wherein each of the first and second sensors comprises a radar sensor.

Regarding claim 13, Janky et al (figs. 3-6, col.9, lines 26-67; col. 10, lines 1-65) disclose the collision detection system as defined in claim 1, wherein the means for estimating 13 does not include means 83, 83 (fig. 3; col. 9, lines 45-55) for receiving an azimuth angle measurement of the object.

*Response to Arguments*

5. Applicant's arguments filed 10/30/06 have been fully considered but they are not persuasive.

The applicant is arguing that the claims have been amended to put the claims in a means plus function format. That is the applicant argues that the prior art does not disclose "means for estimating a cross location of the object as a function of the first and second range measurements". The examiner disagrees. Applicants specification page 2, last few lines of paragraph 0004 defines a crossing location as a location in front of the vehicles bumper that the object is expected to come in contact with. In other words, the location a first vehicle will be in front of a second vehicle.

It is noted that Janky (column 13, lines 6-24; col. 9, lines 52-64) sets forth what is construed as "crossing location" as defined by the applicant Janky further disclose "estimating a crossing location" (see delta y13, fig. 3; col. 9, lines 52-64).

Janky (figs. 3-6, col. 9, lines 26-67; col. 10, lines 1-65) further discloses a sensor 83 that senses vehicle 43 on the right side of host vehicle 11. Later on, if vehicle 43 moves to the center lane, sensor 81 also senses the same vehicle 43. In addition, if vehicle 43 moves to the left lane of host vehicle, sensor 85 also senses the same vehicle 43. The location of the object is then estimated by means 13 to be at a location in front of the bumper of the vehicle.

It is further noted that applicant's "means for" clause is actually a Commercial Off The shelf controller (see page 7 of the specification. How does the controller of Janky not meet this functionality?

It is believed that the rejections are proper and stand.

*Communication*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 571-272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronnie Mancho  
Examiner  
Art Unit 3663

January 20, 2007

  
JACK KEITH  
SUPERVISORY PATENT EXAMINER